

APPENDIX – BEST PRACTICES RESEARCH

ARIZONA - from 06.25.03 meeting minutes:

Chandler – pop. 211K. Due to growing public interest, Chandler began collecting in 2000. Only expense is roll-off at transfer station before being shipped to recycler. In 2000, collected 6 tons, today have collected 25 tons. Collect only monitors/CPUs. Have no regulatory measures. Conduct HHW events 2x/year (contractor). Intel hosts a computer reuse/training program, STRUT, for high school students.

Tucson – pop. 500K. To address resident needs, have provided computer recycling at their landfill for 3 years. Landfill open 7 days/week. Collect cell phones on EarthDay. State regulates HHW.

Phoenix – pop. 1.3MM with 335 K single family. City provides refuse, recycling, and disposal for residents. Conduct 10 HHW & e-waste events annually. In 2001, received state grant to purchase two trucks for home pick-up. Charge \$10 per pick-up (covers costs). Have blue bins for small electronics (no monitors, TVs) at no additional charge. In 2002, collected 650 tons of appliances, e-waste from call in & special collections. INTEL program in place.

CURBSIDE - From 06.25.03 meeting minutes:

Curbside Programs – Jill Hamilton provided follow-up on her research on curbside HHW and e-waste programs. Curbside, Inc. provides door-to-door HHW collection. Looked at 4 CA locations, Denver, Iowa, Kane County, 4 PA counties, and a Texas location. Summary to be provided.

City of St. Louis and Madison County are exploring options to provide curbside collection of e-waste. Madison County is looking at coordinating with franchise haulers to collect e-waste through cleanup events, etc. Madison County may pay them to do that.

FLORIDA – from 05.28.03 meeting minutes:

Florida does not currently ban CRTs from landfill disposal. Best Buy is in partnership with Sony, Philips, and Magnavox who cover most of the collection costs. Best Buy receives name recognition for their efforts. Charge user fee for CRTs (\$10 for monitor, \$15 for TV).

ILLINOIS (McClearey document attached) - From 06.25.03 meeting minutes:

Paint Partners Program -- ILEPA program to encourage more cost-effective management of leftover paint. ILEPA HHW collection program does not allow host communities to advertise accepting latex paint at HHW events.

Fostering partnerships provides local ownership for the program. Collaboration of effort and resources serves as a model approach for e-waste collection. Everyone wins.

Started in '99 with retail paint stores, didn't work. In 2002, Madison County implemented pilot program with one township Highways Dept serving as paint drop-off. In 2003, now have two pilot locations & added communities that can participate. County provides supplies, publicity (\$500), purchased paint can crusher (\$15K) that is shared among host sites. County advertises in local newspapers, cable TV, etc. ILEPA funds drums & paint disposal, and 5-gal buckets for blended recycled paint. Host sites provide labor, volunteers, and additional publicity. They bulk and package usable latex paint and distribute to non-profits. County markets recycled paint through direct mail to target organizations. Operate May-October, rotating sites on 3rd Sat. of the month. Future plans are to purchase additional paint can crusher.

INDIANA (Hamilton document attached) - From 07.30.03 meeting minutes:

Indiana Department of Environmental Management: As a state, we are participating in the IRC's e-scrap project, a cooperative venture of key stakeholders, to encourage the districts and other local entities to hold electronics collections. Most programs are implementing electronics recycling programs because of the hazards in electronics and requests from citizens to take the materials.

Solid waste districts are responsible for managing the electronics programs, although a few cities and towns are starting to provide programs. Program funding comes from the districts, but they do receive grant \$\$ from us that they can use to promote the collections.

Program goals are to collect the materials and make sure they are properly recycled. Key issues include the cost (electronics recycling programs can be very expensive) and changing public attitudes/behaviors ("I'll do whatever I want with my trash"). Need to collect TVs because people will bring them in anyway. Not aware of any proposed legislation.

Monroe County SWMD: Banned CRTs from the County landfill and implemented electronics collection program in Fall 2001. Residents can drop off electronics at the Hazardous Materials Facility or the Anderson Road Landfill. Use contractor for processing the electronics. Program goals are to recycle electronics in an environmentally responsible manner and save landfill space. Charge user fees (\$5-\$20 per item). Collected over 700,000 pounds since 2001.

Wabash County SWMD: Population 35,000. In 2001, a group of northeastern Indiana districts gathered over concerns for this rapidly growing portion of the waste stream and growing concerns for safe disposal. Received initial support from stakeholders pushing lead and mercury programming, both of which are established priorities for the state. Created a multi-county program that operates independently, but uses a common

processing contractor. 6 Districts representing 10 counties originally started the program.

Manchester Recycling Inc. (MRI) is contractor chosen to manage staffing of recycling drop-off locations. Envirocycle is the electronics processor for cooperative regional program. Contractor(s) had to be able to handle TV's and process all materials in the U.S. The District provides for disposal expenses (from landfill tipping fees). Accept basically any electronic product. Charge \$5 per carload user fee. Budgeted \$10,000/year for disposal. Currently collecting an estimated 14,000 lbs./year.

Included electronics in our single day HHW events. Incorporate charitable contributions, material swaps, etc. in program. But there is simply too much material out there for these to be considered effective strategies on its own. Need to educate the public about the cost of proper disposal.

Future plans include establishing a new collection facility (8,000 sq. ft. warehouse) to manage the "hard to recycle" materials program. We plan to start with the batteries, oil, appliance, tires and electronics. Labor will be provided via our own workforce this time. Will expand facility to accept other problem wastes, including fluorescent tubes/ballasts and HHW.

IOWA - From 07.30.03 meeting minutes:

Iowa legislature required DNR to establish an advisory committee to develop guidelines and recommendations on rules & permitting requirements for electronics recyclers/processors. Also, DNR has issued four awards in its small grants program (up to \$10,000) for local governments & organizations to encourage communities to move away from collection events to an on-going electronics collection program. Encourage communities to charge a user fee (typically \$5 per CRT). Funding from Iowa landfill surcharge. Will send contact information for grantees.

MICHIGAN – from 05.28.03 meeting minutes:

Permanent drop-off and curbside collection programs are growing. Permanent facilities allow for sharing overhead w/ other programs. Most programs accept computer monitors, software, peripherals, TVs & VCRs. CRTs comprise greatest volume (30% monitors/37% TVs). Manual described how to estimate recovery volume and program costs, funding sources, and media outreach & budget. Michigan discourages removing batteries that will require treatment as Universal Waste. Average 3%-6% for education/publicity budget. Need to give at least 2 weeks notice before program for realistic participation.

MISSOURI – from 05.28.03 meeting minutes:

Three HHW Collection Centers (Columbia, KC, Springfield). Pursued for a greener community image. Columbia has been open 9-10 years, Springfield 5-6 years, and KC 4-

5 years (or more). Open varying days of the week. Some have Saturday hours. Usually operated by 2-3 Public Works/City staff that has minimum 40 hour training. Funding primarily from municipal landfill tipping fees. User fee for outside county users.

KC collects 1MM pounds last year. KC facility spans approx. 10 acres in industrial site.

St. Charles County working on two sites that will take HHW, e-waste, and recyclables.

Most inefficient way to manage HHW is to mobilize staff and equipment for one-day special events.

University City – Lynnette Hicks provided preliminary results for this district-funded collection event. Served approximately 400 residents (100 from partner cities; Clayton, Olivette, Pagedale). Don't take from businesses. About 7,000 pounds of equipment were diverted for reuse. One artist took 200-300 keyboards for an art project. Much easier time recruiting volunteers (Job Corp, high school) since can take anything they want. Some participants brought in material from multiple households. At end of the day, items not taken for reuse were shipped out for recycling. Survey results indicate most residents are not opposed to a nominal fee and would prefer a one-time fee.

PENNSYLVANIA

Union County – Held first collection event. Received 60 skids that were shipped to Unicom for no processing charge. Used a municipal drop-off site with resources (volunteers, forklift, insurance) already in place. Chose an off time to avoid confusion with on-going recycling operations. Paid local Boy Scouts, youth groups \$150 for assistance. Trucking was the largest cost.

Dauphin County – Holds about 2 collection events per year at no charge to participants. For a small fee, County provides home pick-up through curbside HHW collection. In Hershey, County arranged with WMI for collection. County then donated materials to local non-profit to process 4 tons of equipment. In Harrisburg, County contracted with WMI (who didn't provide labor so was very costly because had to load/unload materials). Collected 60 tons. Envirocycle ran some event(s) that cost \$0.22/lb versus \$0.35/lb for WMI. Suspect lower cost due to cost sharing with partners (Sony, Sharp, Panasonic, etc). Envirocycle accepted all electronics and provided full service. County had landfill and incinerator.

Lancaster County – 150K households. Built \$200K HHW facility that serves as a drop-off for computer equipment. There is no limit or fees for residents; businesses are charged \$5/unit up to a maximum limit of 25 units monthly. Started w/ \$200K budget. Now, have 5 HAZWOPER trained employees & \$100K annual budget (50% grant, 50% tipping fees). Open M-F from 8:30am – 3pm & Saturday from 8am-12 noon twice a month. At current facility, load directly into trailer. Plan on building new HHW facility and using current facility for electronics.

PA DEP – Been giving out grant to local communities to encourage establishing permanent facilities for electronics collection because they are less costly and can collect more material. Envirocycle is the main recycler in the state. Collection/processing costs are \$0.16 - \$0.25/lb. Can expect average participation rate up to 1% (0.60% is highest turnout so far w/ the most aggressive advertising). Cannot advertise enough through whatever means available. Important to form partnerships. Clearly know what you will accept. The bulk of collection will be monitors and TVs (TVs account for up to 75% volume at one event). It's a lot easier to advertise and process if take all types of materials. Important to determine where your material is going (guarantee North American markets). Program results so far show that charging a nominal fee (\$10 or less) has not adversely affected turnout. Charge a nominal fee from the outset, too hard to institute at a later date.

Additional Comments – Unicor (prison labor industry) is a huge operation but big conflict with for-profit operators. Electronics Industry Alliance and USEPA have pilot programs in progress. Need to perform cost comparison of permanent versus events for PA programs. Collection operations create a lot of waste (Styrofoam, cardboard, packaging, manuals, etc.). Data destruction is very important.